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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
HSU, JONI	

ART UNIT	PAPER NUMBER
2671	

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/622,956	SLOTT ET AL.	
	Examiner	Art Unit	
	Joni Hsu	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13,47-59 and 72* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,47-59 and 72* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/22/05, 11/14/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on September 22, 2005 and November 14, 2005 was filed after the mailing date of the application on July 18, 2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Amendment

2. Applicant's arguments with respect to claims 1-7, 11-13, 47-53, 57-59, and 72 have been considered but are moot in view of the new ground(s) of rejection.

3. Applicant's arguments, see pages 21-29, filed November 21, 2005, with respect to the rejection(s) of claim(s) 1-7, 47-53, and 72 under 35 U.S.C. 102(b) and claims 11-13 and 57-59 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Yang (US 20020035596A1).

4. Applicant argues that a bitmap is not the same as a frame buffer or memory, and therefore Epard (US005241625A) does not teach an off-screen memory (pages 21-22).

In reply, the Examiner agrees. However, new grounds of rejection are made in view of Yang.

5. Applicant's arguments filed November 21, 2005 with respect to the rejections of Claims 8-10 and 54-56 have been fully considered but they are not persuasive.

6. Applicant argues that the Epard reference and the Yang reference do not teach a display computer with off-screen memory with available memory and wherein each of the sub-images can fit into the available memory of the off-screen memory (pages 25-27).

In reply, the Examiner disagrees. Epard describes a method for sending a composite image from a host computer (10, Figure 3B) to a display computer (20; Col. 11, lines 54-57). QuickDraw (21) copies bit images to and from any bitmap off-screen (Col. 8, lines 6-10). A QuickDraw is located in the display computer, as can be seen in Figure 3B. The method comprises breaking the composite image into one or more sub-images (Col. 6, lines 28-56), wherein each of the sub-images can fit into the off-screen bitmaps (Col. 6, lines 40-49; Col. 8, lines 6-10); and transmitting each of the sub-images to the display computer to the off-screen bitmaps (Col. 11, lines 54-57; Col. 6, lines 40-49; Col. 8, lines 6-10).

However, Epard does not teach that the off-screen bitmaps are stored in an off-screen memory with available memory. However, Yang describes a method for sending an image from a host computer to a display computer, the display computer having an off-screen memory with available memory, the method comprising transmitting each of the images to the display computer for storage in the off-screen memory [0017].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-9, 47-55, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epard (US005241625A) in view of Yang (US 20020035596A1).

10. With regard to Claim 1, Epard describes a method for sending a composite image from a host computer (10, Figure 3B) to a display computer (20; Col. 11, lines 54-57). QuickDraw (21) copies bit images to and from any bitmap off-screen (Col. 8, lines 6-10). A QuickDraw is located in the display computer, as can be seen in Figure 3B. The method comprises breaking the composite image into one or more sub-images (Col. 6, lines 28-56), wherein each of the sub-images can fit into the off-screen bitmaps (Col. 6, lines 40-49; Col. 8, lines 6-10); and

transmitting each of the sub-images to the display computer to the off-screen bitmaps (Col. 11, lines 54-57; Col. 6, lines 40-49; Col. 8, lines 6-10).

However, Epard does not teach that the off-screen bitmaps are stored in an off-screen memory with available memory. However, Yang describes a method for sending an image from a host computer to a display computer, the display computer having an off-screen memory with available memory, the method comprising transmitting each of the images to the display computer for storage in the off-screen memory [0017].

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify the device of Epard so that the off-screen bitmaps are stored in an off-screen memory with available memory as suggested by Yang because Yang suggests that an off-screen surface needs to be stored in memory in order to be operated on [0081].

11. With regard to Claim 2, Epard describes that each of the sub-images is a rectangle (Col. 6, lines 50-56).

12. With regard to Claim 3, Epard describes that a QuickDraw Capture (QDC) module (22, Figure 3B) transmits sub-images (Col. 6, lines 28-56) to the display computer (20; Figure 3B; Col. 12, lines 5-23). The QDC SendRect message is sent to the display computer to indicate that a sub-image of a composite image is being transmitted, the one or more messages containing data sufficient to reconstitute the sub-image on-screen (Col. 30, lines 49-56; Col. 32, lines 5-7).

13. With regard to Claim 4, Epard describes that a QuickDraw Capture (QDC) module (22, Figure 3B) transmits sub-images (Col. 6, lines 28-56) to the display computer (20; Figure 3B; Col. 12, lines 5-23). The QDC Start message is sent to the display computer to indicate that a sub-image of a composite image is about to be transmitted (Col. 30, lines 49-56; Col. 31, lines 20-24).

14. With regard to Claim 5, Epard describes that the sending one or more messages includes sending one or more messages to the display computer (27, Figure 3B) indicating a width and height of the sub-image (Col. 28, lines 50-60; Col. 30, lines 12-15).

15. With regard to Claim 6, Epard describes sending sub-images (Col. 6, lines 50-56) to the display computer (20, Figure 3B; Col. 11, lines 54-57). Epard describes that the sending one or more messages to the display computer includes sending one or more messages to the display computer indicating the transmission of the sub-image of a composite image has been completed (Col. 26, lines 44-47).

16. With regard to Claim 7, Epard describes that the sending one or more messages includes sending one or more messages to the display computer (27, Figure 3B) indicating the position on the screen to which the sub-image of the composite image is to be displayed (Col. 27, lines 26-31).

17. With regard to Claim 8, Epard does not teach determining the amount of memory available in the off-screen memory. However, Yang describes a thin client system [0002] where an application server (160, Figure 1) locally executes an application program and provides the application output data to clients/network users (118) who then display the results on a display screen coupled to their local computer [0003]. The method includes determining the amount of memory available in the off-screen memory [0082].

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the device of Epard to include determining the amount of memory available in the off-screen memory as suggested by Yang because Yang suggests that this is needed so that the host computer does not form an off-screen surface larger than the display computer's available off-screen memory [0082].

18. With regard to Claim 9, Epard does not teach that the determining includes receiving an indicator of the amount of memory available in the off-screen memory during or after initialization of the connection between the display computer and host computer. However, Yang describes that the determining includes receiving an indicator of the amount of memory available in the off-screen memory during or after initialization of the connection between the display computer (118, Figure 1) and host computer (160) [0082]. This would be obvious for the same reasons given in the rejection for Claim 8.

19. With regard to Claim 47, Claim 47 is similar in scope to Claim 1, and therefore is rejected under the same rationale.

20. With regard to Claim 48, Claim 48 is similar in scope to Claim 2, and therefore is rejected under the same rationale.

21. With regard to Claim 49, Claim 49 is similar in scope to Claim 3, and therefore is rejected under the same rationale.

22. With regard to Claim 50, Claim 50 is similar in scope to Claim 4, and therefore is rejected under the same rationale.

23. With regard to Claim 51, Claim 51 is similar in scope to Claim 5, and therefore is rejected under the same rationale.

24. With regard to Claim 52, Claim 52 is similar in scope to Claim 6, and therefore is rejected under the same rationale.

25. With regard to Claim 53, Claim 53 is similar in scope to Claim 7, and therefore is rejected under the same rationale.

26. With regard to Claim 54, Claim 54 is similar in scope to Claim 8, and therefore is rejected under the same rationale.

27. With regard to Claim 55, Claim 55 is similar in scope to Claim 9, and therefore is rejected under the same rationale.

28. With regard to Claim 72, Claim 72 is similar in scope to Claim 1, except that Claim 72 is for a program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform the method. Epard describes a program storage device (22, Figure 3B) readable by a machine, tangibly embodying a program of instructions (23) executable by the machine to perform the method (Col. 4, lines 65-67; Col. 12, lines 10-23). Therefore, Claim 72 is rejected under the same rationale as Claim 1.

29. Claims 10 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epard (US005241625A) in view of Yang (US20020035596A1), further in view of Caulk (US005392391A).

30. With regard to Claim 10, Epard and Yang are relied upon for the teachings as discussed above relative to Claim 9.

However, Epard and Yang do not teach that the determining further includes receiving any stride requirements from the display computer during or after initialization of the connection between the display computer and host computer. However, Caulk describes receiving pitch requirements from the destination (Col. 9, lines 17-28). Caulk describes an X Windows System (Col. 6, lines 61-65), in which a client computer connects to a host computer, as discussed in the disclosure of this application in the background of the invention [0004]. Caulk relates to display

applications (Col. 2, lines 35-40). Therefore, the destination is the display computer. Pitch is the same as stride, as is well-known in the art and taught in many publications, such as Microsoft's website. Therefore, Caulk describes receiving any stride requirements from the display computer during or after initialization of the connection between the display computer and host computer.

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the devices of Epard and Yang so that the determining further includes receiving any stride requirements from the display computer during or after initialization of the connection between the display computer and host computer as suggested by Caulk. Stride requirements are needed when accessing surfaces directly to ensure staying within the memory allocated for the dimensions of the surface and staying out of any memory reserved for cache. Additionally, when you lock only a portion of a surface, you must stay within the rectangle you specify when locking the surface. Failing to follow these guidelines will have unpredictable results, such as a garbled display. Stride requirements are well-known in the art, widely used, and can be found in many publications, such as Microsoft's website.

31. With regard to Claim 56, Claim 56 is similar in scope to Claim 10, and therefore is rejected under the same rationale.

32. Claims 11, 12, 57, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epard (US005241625A) and Yang (US 20020035596A1) in view of Redford (US006049330A).

33. With regard to Claim 11, Epard and Yang are relied upon for the teachings as discussed above relative to Claim 1. Epard describes breaking the composite image into one or more sub-images (Col. 6, lines 28-56) and copying them to the off-screen bitmaps (Col. 6, lines 45-48; Col. 8, lines 6-10), and Yang describes that the off-screen bitmaps are stored in an off-screen memory with available memory [0017], as discussed in the rejection for Claim 1.

However, Epard and Yang do not teach that the breaking includes breaking the composite image into one or more sub-images, wherein the sub-images are chosen so as to maximize the number of sub-images that are equal in size to the available memory in the off-screen memory. However, Redford describes breaking the composite image into one or more sub-images (Col. 3, lines 31-33). A cumulative memory allocation, which defines the current allowable memory, is determined each time a new sub-image is processed. The cumulative memory allocation can be based on the number of sub-images currently processed and an average memory allocation for each sub-image. The processor module generates a series of data packets for each processed sub-image. The bits contained in each data packet are counted and the result is added to the number of bits previously stored in memory to yield a current memory total. The current memory total is compared to the cumulative memory allocation to determine whether the current data packet should be written to memory. If the current memory total does not exceed the cumulative memory allocation, the current data packet is written to memory. If the current memory total exceeds the cumulative memory allocation, no further data packets for the present sub-image are written to memory and processing begins on the next sub-image (Col. 2, lines 31-47). If earlier processed sub-images do not fill the average memory available for each sub-image, later processed sub-images containing more information can take advantage of the excess

memory for the earlier sub-images (Col. 2, lines 52-55). Therefore, the sub-images are chosen so as to maximize the number of sub-images that are equal in size to the available memory.

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the devices of Epard and Yang so that that the breaking includes breaking the composite image into one or more sub-images, wherein the sub-images are chosen so as to maximize the number of sub-images that are equal in size to the available memory in the off-screen memory as suggested by Redford because Redford suggests that this method ensures that there is enough room in the memory to store the data and it avoids "memory gaps" (Col. 2, lines 31-51).

34. With regard to Claim 12, Epard does not teach that the breaking includes breaking the composite image into one or more sub-images, wherein the sub-images are chosen so as to maximize the number of sub-images that are equal in size to some fixed width and height. However, Redford describes breaking the composite image into one or more sub-images (Col. 3, lines 31-33). The sub-images are chosen so as to maximize the number of sub-images that are equal in size to the available memory (Col. 2, lines 31-47, 52-55), and therefore are equal in size to some fixed width and height of the available memory. This would be obvious for the same reasons given in the rejection for Claim 11.

35. With regard to Claim 57, Claim 57 is similar in scope to Claim 11, and therefore is rejected under the same rationale.

36. With regard to Claim 58, Claim 58 is similar in scope to Claim 12, and therefore is rejected under the same rationale.

37. Claims 13 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epard (US005241625A) and Yang (US 20020035596A1) in view of Larson (US006031550A).

38. With regard to Claim 13, Epard and Yang are relied upon for the teachings as discussed above relative to Claim 1. Epard describes copying from a composite image in a pixmap to a realized window (Col. 50, lines 62-63).

However, Epard and Yang do not teach that the breaking and transmitting are performed when a copy area command from a composite image in a pixmap to a realized window is recorded. However, Larson describes recording instructions for data access requests (Col. 7, lines 25-27), which are copy area commands. Source pixels can be copied to destination pixels by dividing the block of source pixels into separate blocks (Col. 8, lines 54-59). Therefore, the breaking and transmitting are performed when a copy area command from a composite image to a realized window is recorded.

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the devices of Epard and Yang so that the breaking and transmitting are performed when a copy area command from a composite image in a pixmap to a realized window is recorded as suggested by Larson because Larson suggests that this avoids X crossing (Col. 8, lines 54-59). X crossing occurs when the transfer of a block of pixel data crosses an X

axis in display memory. Crossing an X boundary incurs an inordinate amount of accesses to the memory, and therefore it is advantageous to avoid X crossing (Col. 2, line 47-Col. 3, line 5).

39. With regard to Claim 59, Claim 59 is similar in scope to Claim 13, and therefore is rejected under the same rationale.

Prior Art of Record

"Width vs. Pitch"; http://msdn.microsoft.com/library/en-us/directx9_c/directx/graphics/ProgrammingGuide/GettingStarted/Direct3Dsurfaces/widthvspitch.asp.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joni Hsu whose telephone number is 571-272-7785. The examiner can normally be reached on M-F 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JH